



Philadelphia International Airport Airfield Development Options



Client Name: CH2M Hill, member of Global Program Partners JV

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As the \$6.4 billion Capacity Enhancement Plan (CEP) is being implemented at Philadelphia International Airport (PHL), the Program Management Office (PMO) re-considered the phasing of the airfield development options regarding runway improvements. Two major runway development plans for the nation's largest aviation project include the extension of one runway and the construction of a new parallel runway. As part of the PMO, TransSolutions was tasked with evaluating the aircraft capacity/delay of the development options:

1. Future basecase, which includes some new taxiways and realignments as well as a short runway extension to Runway 09R-27L
2. Construct extension to Runway 08-26 first
3. Construct new Runway 09R-27L first
4. Ultimate build-out of the CEP with all the above improvements

To analyze the capacity, TransSolutions developed a model of the airport in *Simmod PLUS!* The model development started with on-site observations from the local FAA air traffic control tower (ATCT) and discussions with the local ATCT staff to understand the PHL operations and unique applications of the standard FAA procedures. Data was also collected from the US Airways ramp tower. After the data was analyzed and the model created, the outputs were compared with historical FAA and PHL data to ensure the model was calibrated. Recent changes in taxiflow patterns and runway use were also incorporated.

Next, the calibrated model was used to analyze delays with the current traffic demand and two forecast growth levels under three wind/weather scenarios most commonly used at PHL. Delay values for each development scenario were obtained from the analysis. In addition, a scenario was also run for the construction of the runway extension. Using the capacity analysis, the PMO was able to recommend development phasing that will continue to accommodate the demand, even while construction is occurring.

In addition to the primary analyses, TransSolutions also provided supporting materials for relaying information to various airlines and stakeholders reviewing PHL's plans.